EPA Comments on

Proposed Plan Approval 23-0012C

For Braskem America, Inc.

This proposed plan approval is to increase the total polypropylene production rate from plants 1 and 2 at Braskem America, located in Marcus Hook, Pennsylvania, from 455,900 tpy to 595,680 tpy. The facility is a major VOC NNSR source.

Significant comments are highlighted.

1. NNSR Analysis
    a. Step One to the NNSR applicability determination must be delineated. Baseline actual VOC emissions for all affected units must be included and an explanation of the basis for those emissions (CEMs, bases for any emissions factors used, etc.); The Baseline Period must be clear. (January 2014 through December 2015?)

    The review memo is revised to specify that the baseline period is October 2013 through September 2015 for any modified sources. To provide more details to the emissions calculations, the following sections in the Plan Approval application are attached to this response document:

    - Section 3 (Detailed Project Emissions Analysis), and
    - Attachment C (Back-up Emissions Calculations).

    The table below summarizes the sources and the baseline determination.

TVOP Source ID	Project Source	Baseline Discussion
H-5 AREA		
107	RGP Storage Expansion	New source; therefore, no baseline.
	PGP Unloading and Transfer Expansion	New source; therefore, no baseline.
SPLITTER AREA		
106	IRPL Connection	New source; therefore, no baseline.
	Propane Return Line from the Polymers Units	New source; therefore, no baseline.
	P1/P2 PGP Product Transfer Pumps Upgrade[1]	New source; therefore, no baseline.
	Incremental Dryer Regenerations	PAE - BAE analysis shown in Att. C page 15 of 28

TVOP Source ID	Project Source	Baseline Discussion
C100	SPMT Ethylene Complex Flare	Flows to the flare are either new or the PAE - BAE analysis for each flow is provided in other sections of Attachment C.
POLYMERS UNITS		
101A/B	Incremental Storage Silos Purging	PAE - BAE analysis shown in Att. C page 24 of 28
102A/B	Propylene Charge Pumps Modifications[2]	New source; therefore, no baseline.
	Plant 1/2 Manufacturing Baghouses	PAE - BAE analysis shown in Att. C page 18 of 28
102A/B	Propane Return Line Filter Changing	PAE - BAE analysis shown in Att. C page 20 of 28
	Incremental Propylene Degassing Column	PAE - BAE analysis shown in Att. C page 21 of 28
	Incremental Propylene Dryer Regenerations	PAE - BAE analysis shown in Att. C page 22 of 28
	Incremental Product Purge Bin Purging	PAE - BAE analysis shown in Att. C page 23 of 28
New	Railcar Cleaning Station and Baghouse	New source; therefore, no baseline.
C02	Braskem Flare	Flows to the flare are either new or the PAE - BAE analysis for each flow is provided in other sections of Attachment C.

1 - The P1/P2 PGP Transfer Pumps are proposed to have new impellers installed; however, this change will not result in an emissions increase. The emissions increases will occur from new periodic maintenance purges and new fugitive VOC piping components. Therefore, there are no baseline emissions for this change.
2 - The Propylene Charge Pumps are proposed to have new impellers installed; however, this change will not result in an emissions increase. The emissions increases will occur from new periodic maintenance purges and new fugitive VOC piping components. Therefore, there are no baseline emissions for this change.

b. The proposed throughput limit of 595,680,000 pounds per year for each plant would establish potential to emit (PTE) for VOC emissions. If PTE is used [and not projected actual emissions (PAE)], no emissions may be excluded in the analysis.

The production rate of the facility is not directly proportional to VOC emissions as certain operating parameters vary. For example, the fugitive emissions from the existing components will not change under current work practices. The fugitive emission increases are from the new components only. The production rate

increase related emission increases are detailed in Attachment C. Response to Comment 1.a. above also describes the baseline to projected actual emissions. Excludable VOC emissions (that the sources were capable of accommodating) were factored into the projected actual analysis for only the Polymers Units including Manufacturing Baghouses, and Purge Bins. (Source IDs 102A and 102B), Storage Silos (Source IDs 101A and 101B).

Braskem did not request any increases to VOC emissions limits in the current Title V Operating Permit 23-00012. The production limit is set for each production line.

c. Please provide the calculations used that show the VOC emissions associated with the new PTE limits.

See attached Section C.

d. Please show how the VOC increase from the project is determined, i.e., PTE minus Baseline Actual Emissions (BAE). Without this information, the NNSR analysis is incomplete and the submission to EPA is incomplete.

See Response to Comment #1.a.

2. PSD Analysis

a. Please identify if the source is a major PSD source so that the reader may ascertain whether the modification is a modification to a major source.

The review memo was revised to state:

"The facility is not major for all regulated pollutants in an attainment area. The facility is major for VOC emissions and located in an ozone marginal nonattainment area."

b. Assuming the source is a major PSD source, or if not, to ascertain whether the modification itself is a major source, Step One to the NSR applicability determination must be delineated. The Baseline Period must be identified (January 2014 through December 2015?) BAE for all affected units must be included.

The project is not a major PSD source. See response to Comment 1.a.

c. Please provide the calculations used that show the emissions for all NSR regulated pollutants, including $PM_{2.5}$ and excluding VOCs, associated with the

BAE and the new PTE limits. (See above comment regarding PTE compared to PAE)

See response to Comment 1.

d. Please show how the increase from the project is determined, i.e., PTE minus Baseline Actual Emissions (BAE). Without this information, the PSD NSR analysis is incomplete and the submission to EPA is incomplete.

See response to Comment 1.

3. CAM – The review memo states that CAM does not apply because the emissions controlled by the flares do not have an emissions standard.
   a. Flare C02 - Condition #001 to Sources 102a and b in the title V permit specify VOC emissions limits, so the above statement is not correct. The flare is a control device as defined in 40 CFR 64.1. This assertion, even if correct, is not one of the exemptions found at 40 CFR 64.2(b).

      Flare C02 is subject to CAM. The review memo was revised to address the requirements to comply with CAM.

   b. Flare C100 – The review memo should state, in the CAM discussion, that the applicability of CAM to the Sunoco flare should be addressed in the DNREC permit. From looking at the DNREC permit, one might conclude that the flare is exempt from CAM because the flare is subject to MACT and NSPS requirements.

      This flare complies with MACT, and is exempt from CAM requirments.

4. The project –
   a. The permit map is not included in the draft permit and should be, as the map would show which units have controls and how emissions are directed via stacks.

      Maps were added.

   b. Because downstream (flares) and upstream (boilers) are affected by the project, we expect that the permits for SPMT in Delaware as well as FPL would be modified. We previously advised that the steam demand is not part of the project because the Braskem facility is not aggregated with FPL. Please note this in the review memo. Also please note, in the review memo, whether DNREC has been informed about this project and whether the FPL permit is being modified accordingly.

As noted in Sections 3.5 and 3.6 of the January 2016 Plan Approval application, the Ethylene Complex Flare and Auxiliary Boilers will not be modified in any way and will only experience increased utilization within existing capacities as part of the project. Sunoco Partners Marketing & Terminals owns and operates these sources and is aware of their respective impacts as a result of this project. There are no changes required to the existing operating permits for either of these sources.

5. PM10 and PM2.5 emissions - Please explain the purpose of and basis for the proposed PM_{10} emissions limits. Why are PM_{10} Limits proposed but not $PM_{2.5}$ limits? Depending on the purpose of these limits, a means of assuring compliance with the limits may need to be specified in the plan approval.

   The PM10/PM2.5 limits are based on BAT of 25 Pa. Code §127.12(a)(5).

6. VOC emissions - We note that the current VOC caps on the production lines in Plants 1 and 2 are not changed. We also note that the current permit allows *The permittee shall calculate the VOC emissions on a monthly basis and 12 month rolling sum, using DEP approved methods*. The methods to assure compliance with the various VOC caps for this facility must be specified in order to make this permit enforceable as a practical matter, i.e., to confirm that the source remains in compliance with the VOC caps.

   For the Source ID 101A/B Plant 1/Plant 2 Storage Silos stack test emissions information is used to calculate VOC emissions.

   For the Source ID 102A/B Plant 1/Plant 2 Polypropylene Manufacturing Sources and Source ID 106 Propylene Splitter Process mass balance calculations using mass flow meter data are used to calculate VOC emissions.

   For the Source ID 107 H-5 Propylene Unloading Rack, mass balance calculations and engineering estimates are used to calculate VOC emissions.

   For the Source ID 103A/B Plant 1/Plant 2 Fugitive sources, the actual VOC leak information collected via the LDAR programs is used to calculate VOC emissions.

   These methods to assure compliance with the VOC caps are specified in the Plan Approval.

7. HAP emissions – Please identify the HAP PTE, after the proposed change, in the review memo. If this change affects its current minor HAP status, affected applicable MACT requirements should be fully addressed.

   The Braskem Marcus Hook Polymers facility is an area source of HAP emissions. The increase in production rate associated with this project will not increase the potential for HAP emissions from the facility or change the area source HAP status.

8. The same production limits on plants 1 and 2 are stated in various conditions, including Condition #2 on pages 11, 14 and 18 and Condition #3 on pages 12, 16 and 20. We recommend that the throughput limit should be set forth once, perhaps in Section C, for brevity/clarity.

These emission limits are source specific, and not a facility wide emission limit. Therefore, it is better to specify them under each source ID.